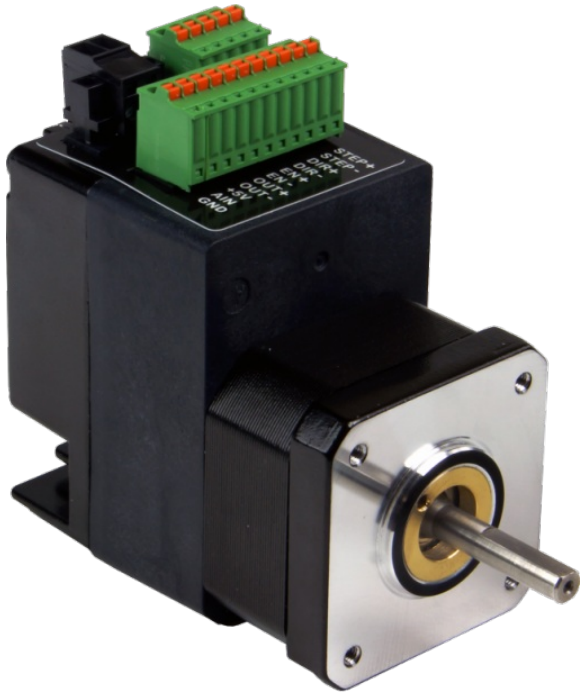
Applied Motion Products, Inc.
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STM17S-1RN

NEMA 17 Integrated Drive+Motor



Product Features

- *Sophisticated current control*
- *Anti-resonance*
- *Torque ripple smoothing*
- *Microstep emulation*
- *NEMA 17 frame size*
- *Step & direction, CW/CCW pulse, and A/B quadrature pulse control modes*
- *Velocity (oscillator) control mode*
- *Streaming serial commands (SCL) control mode*
- *RS-485 port for programming and communications*

Description

The STM17S-1RN integrated stepper is a drive+motor unit, fusing a NEMA 17 step motor and a sophisticated 2.0 A/phase (peak-of-sine) stepper drive into a single device. Power to the drive, located at the rear of the motor, must be supplied by an external DC supply. See Related and Recommended Products below for compatible 24 and 48 volt DC power supplies .

The STM17S-1RN integrated stepper can operate in the following control modes: step (pulse) & direction, velocity (oscillator), and streaming serial commands (SCL). (*STM17 integrated steppers do not support operation with the Applied Motion 4-axis and 8-axis SiNet Hubs*). All STM17 units are setup and configured using Applied Motion's *ST Configurator™* software.

Each STM17 integrated stepper comes with 3 digital inputs, 1 digital output, and 1 analog input. The digital inputs accept signals of 5-24 VDC and can be used for connecting pulse & direction signals, end-of-travel limit switches, jog switches, quadrature encoder signals, PLC outputs, sensors, or many other signal types. The digital output can be connected to PLC inputs, counters, lights, relays, or other devices. The analog input accepts 0-5 VDC signals and can be used for velocity and position control.

The STM17S-1RN comes with an RS-485 port for programming and serial communications.

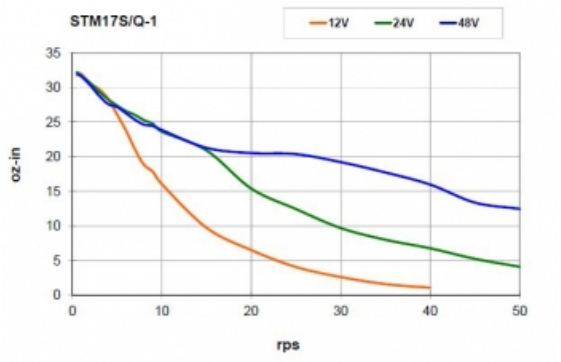
Specifications

Part Number:	STM17S-1RN
Supply Voltage:	12-48 VDC
Supply Voltage Type:	DC
Control Modes:	Step & Direction Velocity (Oscillator) Streaming Commands
Communication Ports:	RS-485
Encoder Feedback:	No
Step Resolution:	Full Half Microstepping Microstep Emulation
Idle Current Reduction:	0-90%
Setup Method:	Software setup
Digital Inputs:	3
Digital Outputs:	1
Analog Inputs:	1 single-ended
Circuit Protection:	Short circuit Over-voltage Under-voltage Over-temp
Status LEDs:	1 red, 1 green
Frame Size:	NEMA 17
Holding Torque:	31 oz-in
Step Angle:	1.8 deg
Rotor Inertia:	5.44E-04 oz-in-sec^2
Length:	2.64 inches
Weight:	10.3 oz
Operating Temperature Range:	0-85 °C
Ambient Temperature Range:	0-40 °C
Ambient Humidity:	90% max, non-condensing
Insulation Class:	Class B (130 ºC)

Downloads

Speed-Torque Curves:	STM17S_Q-1 Torque Curves.pdf
Manuals:	STM17_Hardware_Manual_920-0034B.pdf STM17_Quick_Setup_Guide.pdf Host-Command-Reference_920-0002R.pdf
Product PDF - S3 Link:	http://s3.amazonaws.com/applied-motion-pdf/STM17S-1RN.pdf
Datasheet:	STM-Datasheet-925-0009.pdf
2D Drawing:	STM17S-Q-1XX_RevB.pdf
3D Drawing:	STM17S-1X_Simple.igs
Agency Approvals:	STM17_23_24_CE_DOC.pdf
Application Notes:	APPN0026B-LabVIEW-communication-using-streaming-commands.zip APPN0018_EZ-Series-Touchpanel-HMI.zip

Torque Curves



Software

Software:	SCL Utility ST Configurator™
Sample Code:	scldemo.zip

Products in the Series *STM17 Integrated Steppers*

Part Number	Frame Size	Supply Voltage	Control Modes	Holding Torque	Communication Ports	Encoder Feedback	1pc.
STM17C-3CE	NEMA 17	12-48 VDC	CANopen	68	RS-232, CANopen	Yes	$564.00
STM17C-3CN	NEMA 17	12-48 VDC	CANopen	68	RS-232, CANopen	No	$474.00
STM17Q-1AE	NEMA 17	12-48 VDC	Streaming Commands, Analog Positioning, Encoder Following, Q Programming, Modbus RTU	31	RS-232	Yes	$416.00
STM17Q-1AN	NEMA 17	12-48 VDC	Streaming Commands, Analog Positioning, Encoder Following, Q Programming, Modbus RTU	31	RS-232	No	$326.00
STM17Q-1RE	NEMA 17	12-48 VDC	Streaming Commands, Analog Positioning, Encoder Following, Q Programming, Modbus RTU	31	RS-485	Yes	$424.00
STM17Q-1RN	NEMA 17	12-48 VDC	Streaming Commands, Analog Positioning, Encoder Following, Q Programming, Modbus RTU	31	RS-485	No	$334.00
STM17Q-2AE	NEMA 17	12-48 VDC	Streaming Commands, Analog Positioning, Encoder Following, Q Programming, Modbus RTU	54	RS-232	Yes	$420.00
STM17Q-2AN	NEMA 17	12-48 VDC	Streaming Commands, Analog Positioning, Encoder Following, Q Programming, Modbus RTU	54	RS-232	No	$330.00
STM17Q-2RE	NEMA 17	12-48 VDC	Streaming Commands, Analog Positioning, Encoder Following, Q Programming, Modbus RTU	54	RS-485	Yes	$427.00
STM17Q-2RN	NEMA 17	12-48 VDC	Streaming Commands, Analog Positioning, Encoder Following, Q Programming, Modbus RTU	54	RS-485	No	$337.00
STM17Q-3AE	NEMA 17	12-48 VDC	Streaming Commands, Analog Positioning, Encoder Following, Q Programming, Modbus RTU	68	RS-232	Yes	$424.00
STM17Q-3AN	NEMA 17	12-48 VDC	Streaming Commands, Analog Positioning, Encoder Following, Q Programming, Modbus RTU	68	RS-232	No	$346.00
STM17Q-3RE	NEMA 17	12-48 VDC	Streaming Commands, Analog Positioning, Encoder Following, Q Programming, Modbus RTU	68	RS-485	Yes	$432.00
STM17Q-3RN	NEMA 17	12-48 VDC	Streaming Commands, Analog Positioning, Encoder Following, Q Programming, Modbus RTU	68	RS-485	No	$354.00
STM17R-3ND	NEMA 17	12-48 VDC	Step & Direction	68	NA	No	$118.00
STM17R-3NE	NEMA 17	12-48 VDC	Step & Direction	68	NA	Yes	$204.00
STM17R-3NN	NEMA 17	12-48 VDC	Step & Direction	68	NA	No	$118.00
STM17S-1AE	NEMA 17	12-48 VDC	Step & Direction, Velocity (Oscillator), Streaming Commands	31	RS-232	Yes	$380.00
STM17S-1AN	NEMA 17	12-48 VDC	Step & Direction, Velocity (Oscillator), Streaming Commands	31	RS-232	No	$290.00
STM17S-1RE	NEMA 17	12-48 VDC	Step & Direction, Velocity (Oscillator), Streaming Commands	31	RS-485	Yes	$390.00
STM17S-1RN	NEMA 17	12-48 VDC	Step & Direction, Velocity (Oscillator), Streaming Commands	31	RS-485	No	$300.00
STM17S-2AE	NEMA 17	12-48 VDC	Step & Direction, Velocity (Oscillator), Streaming Commands	54	RS-232	Yes	$389.00
STM17S-2AN	NEMA 17	12-48 VDC	Step & Direction, Velocity (Oscillator), Streaming Commands	54	RS-232	No	$299.00
STM17S-2RE	NEMA 17	12-48 VDC	Step & Direction, Velocity (Oscillator), Streaming Commands	54	RS-485	Yes	$397.00
STM17S-2RN	NEMA 17	12-48 VDC	Step & Direction, Velocity (Oscillator), Streaming Commands	54	RS-485	No	$307.00
STM17S-3AE	NEMA 17	12-48 VDC	Step & Direction, Velocity (Oscillator), Streaming Commands	68	RS-232	Yes	$394.00

STM17S-3AN	NEMA 17	12-48 VDC	Step & Direction, Velocity (Oscillator), Streaming Commands	68	RS-232	No	$316.00
STM17S-3RE	NEMA 17	12-48 VDC	Step & Direction, Velocity (Oscillator), Streaming Commands	68	RS-485	Yes	$402.00
STM17S-3RN	NEMA 17	12-48 VDC	Step & Direction, Velocity (Oscillator), Streaming Commands	68	RS-485	No	$324.00